

LISTING OF CLAIMS

1. (currently amended) A method for etching ~~an oxide layer of~~ a substrate, comprising:

~~placing~~ providing a substrate having an oxide layer over a silicon layer,
and an antireflective layer over said oxide layer,

forming a photoresist layer over said antireflective layer, ~~formed over said~~
~~substrate into a reactive chamber;~~

patterning said photoresist layer in a manner which exposes portions of said
antireflective layer;

placing said substrate into a reactive chamber;

introducing into said chamber an etching gas;

generating a plasma of said etching gas at a first power level and contacting
said ~~oxide layer of said~~ photoresist layer of said substrate with said first power level
plasma for a first predetermined time; and,

generating a plasma of said etching gas at a second power level in said
chamber and contacting said ~~oxide layer of said~~ substrate with said second power level
plasma for a second predetermined time to etch ~~said oxide layer~~ said exposed portions
of said antireflective layer, wherein said first and second power levels are different.

2. (original) The method according to claim 1, wherein said first power level
is from about 100 Watts to about 250 Watts.

3. (original) The method according to claim 1, wherein said first power level
is about 150 Watts.

4. (original) The method according to claim 1, wherein said first
predetermined time is from about 3 seconds to about 10 seconds.

5. (original) The method according to claim 1, wherein said first
predetermined time is about 5 seconds.

6. (original) The method according to claim 1, wherein said second power level is from about 800 Watts to about 1100 Watts.

7. (original) The method according to claim 1, wherein said second power level is about 950 Watts.

8. (original) The method according to claim 1, wherein said second predetermined time is from about 30 seconds to about 260 seconds.

9. (original) The method according to claim 1, wherein said second predetermined time is about 60 seconds.

10. (original) The method according to claim 1, wherein said first power level and said second power level plasmas of said etching gas are selected from the group consisting of Cl_2 , HBr , CF_4 , CHF_3 , CH_2F_2 and inert gases.

11. (original) The method according to claim 10, wherein said first power level plasma is CF_4 , CHF_3 and an inert gas.

12. (original) The method according to claim 10, wherein said second power level plasma is CF_4 , CHF_3 and an inert gas.

13. (original) The method according to claim 10, wherein said first power level and said second power level plasmas are CF_4 , CHF_3 and Ar.

14. (original) The method according to claim 10, wherein said first power level and said second power level plasmas are CF_4 , CHF_3 and He.

15. (original) The method according to claim 1, wherein said substrate is a silicon-based substrate.

16. (cancelled)

17. (original) The method according to claim 1, wherein said substrate is a germanium substrate.

18. (cancelled)

19. (original) The method according to claim 1, wherein said substrate is a gallium arsenide substrate.

20-91. (cancelled)

92. (new) The method according to claim 1, further comprising the steps of generating a second plasma etching gas at a third power level and contacting said oxide layer with said third power level plasma for a third predetermined time.

93. (new) The method according to claim 92, wherein said second power level and said third power level are the same.

94. (new) The method according to claim 92, wherein the formulation of said etching plasma gas and said second plasma etching gas are different.

95. (new) The method according to claim 92, wherein said third power level is from about 800 Watts to about 1100 Watts.

96. (new) The method according to claim 92, wherein said third power level is about 950 Watts.

97. (new) The method according to claim 92, wherein said third predetermined time is from about 30 seconds to about 500 seconds.

98. (new) The method according to claim 92, wherein said third predetermined time is about 280 seconds.

99. (new) The method according to claim 92, wherein said third power level generated from said second etching gas is selected from the group consisting of Cl_2 , HBr , CF_4 , CHF_3 , CH_2F_2 and inert gases.

100. (new) The method according to claim 92, wherein said third power level plasma is CF_4 , CHF_3 and an inert gas.

101. (new) The method according to claim 92, wherein said third power level plasma is CF_4 , CHF_3 and Ar.

102. (new) The method according to claim 101, wherein said CF_4 is flowed into said reactive chamber at about 15 sccm.

103. (new) The method according to claim 101, wherein said CHF_3 is flowed into said reactive chamber at about 80 sccm.

104. (new) The method according to claim 101, wherein said Ar is flowed into said reactive chamber at about 140 sccm.

105. (new) The method according to claim 92, wherein said third power level is CF₄, CHF₃ and He.

106. (new) The method according to claim 92, wherein said first power level plasma and said second power level plasma generated from said etching gas and said third power level plasma generated from said second etching gas are selected from the group consisting of Cl₂, HBr, CF₄, CHF₃, CH₂F₂ and inert gases.

107. (new) The method according to claim 13, wherein said CF₄ is flowed into said reactive chamber at about 50 sccm.

108. (new) The method according to claim 13, wherein said CHF₃ is flowed into said reactive chamber at about 50 sccm.

109. (new) The method according to claim 13, wherein said Ar is flowed into said reactive chamber at about 80 sccm.